

## **CLAIMS**

1. (previously presented) A method for dynamically associating type information about extensible messages in a service-oriented architecture, the method comprising:

configuring a simple object access protocol (SOAP) message header associated with a SOAP message body to include message meta-data and semantic type information describing at least a portion of the content of the SOAP message body so as to enable a receiver to interpret and process the content of the SOAP message body using the meta-data and semantic type information included in the SOAP message header, thereby facilitating a dynamic exchange of semantic type information and meta-data information for open content message exchange between a sender and the receiver.

2. (original) The method of claim 1, wherein said SOAP message header includes an extensible markup language (XML) schema for an XML <any> type message.

3. (original) The method of claim 2, wherein said SOAP message header further includes at least one object system type.

4. (original) The method of claim 2, wherein said SOAP message header further includes a resource description framework (RDF) description of the message.

5. (original) The method of claim 2, wherein said SOAP message header further includes a reference to <any> data included within the body of the SOAP message.

6-10. (cancelled)

11. (previously presented) A method for synthesizing and processing dynamically associated meta-data associated with extensible markup language (XML) messages in service-oriented computer architecture, the method comprising:

generating message meta-data within a header of a simple object access protocol (SOAP) message having a SOAP message body, said meta-data describing at least a portion of the content of said SOAP message body so as to enable a receiver to interpret and process the content of the SOAP message body using the meta-data and semantic type information included in the SOAP message header;

receiving said SOAP message;

retrieving the semantic type information and said meta-data from the SOAP header; and

associating said semantic information and said meta-data during processing of the body of said SOAP message, wherein said semantic type information and said meta-data is used to interpret the content of the SOAP message body.

12. (original) The method of claim 11, further comprising:

processing said meta-data with at least one meta-data processor, said meta-data processing being implemented with at least one of a SOAP processor and an XML processor;

wherein said at least one meta-data processor and said at least one of a SOAP processor and an XML processor are configured to validate and map the extensible XML messages.

13. (original) The method of claim 12, wherein said meta-data processing is implemented with at least one of:

a schema generator processor, said schema generator processor based on an XML schemaLocation attribute and namespace information associated with an extended XML message;

a resource description framework (RDF) processor for interpreting said semantic information; and

at least one native processor for managing type system and type mapping information.

14. (original) The method of claim 11, wherein said generating message meta-data further comprises associating, through a sender, the meta-data at runtime using application programming (API) interfaces.

15. (original) The method of claim 11, wherein said generating message meta-data further comprises associating, through a send side receiver, the meta-data at runtime based upon a defined message extension policy for an XML message.

16. (original) The method of claim 11, wherein said retrieving semantic information from the SOAP header further comprises implementing a server side SOAP handler to create one or more meta-data processors.

17. (original) The method of claim 11, wherein said retrieving semantic information from the SOAP header further comprises implementing a SOAP engine to create one or more meta-data processors, based upon the meta-data contained within the SOAP header.

18. (original) The method of claim 11, wherein said retrieving semantic information from the SOAP header further comprises implementing an associating XML processor.

19. (original) The method of claim 16, wherein said one or more meta-data processors created by said server side SOAP handler is configured to load an associated

XML schema from a uniform resource identifier (URI) location specified in the SOAP header.

20. (original) The method of claim 18, wherein said associating XML processor generates warning messages upon encountering at least one of XML elements and XML attributes that are unspecified by the XML schema.

21-30. (cancelled)

31. (new) A system for synthesizing and processing dynamically associated meta-data associated with extensible markup language (XML) messages in service-oriented computer architecture, comprising:

a send side framework for generating message meta-data within a header of a simple object access protocol (SOAP) message having a SOAP message body, comprising a send side SOAP handler configured to create said meta data, said meta data describing at least a portion of the content of said SOAP message body so as to enable a receiver to interpret and process the content of the SOAP message body using the meta-data and semantics included in the SOAP message header; and

a receive side framework for receiving said SOAP message and processing the semantics in the SOAP header, comprising at least one meta-data processor for processing said meta-data, said at least one meta-data processor being implemented with at least one of a SOAP processor and an XML processor;

said receive side framework further configured for retrieving semantic information and said meta-data from the SOAP header, and associating said semantic information and said meta-data during processing of the body of said SOAP message, wherein said semantic information and said meta-data is used to interpret the content of the SOAP message body, and wherein said at least one meta-data processor and said at least one of a SOAP processor and an XML processor are configured to validate and map

the extensible XML messages.

32. (new) The system of claim 31, wherein said at least one meta-data processor is implemented with at least one of:

a schema generator processor, said schema generator processor based on an XML schemaLocation attribute and namespace information associated with an extended XML message;

a resource description framework (RDF) processor for interpreting said semantic information; and

at least one native processor for managing type system and type mapping information.

33. (new) The system of claim 31, wherein said send side framework further comprises a sender for associating the meta-data at runtime using application programming (API) interfaces.

34. (new) The system of claim 31, wherein said send side framework further comprises a sender for associating the meta-data at runtime, said sender using a defined message extension policy for an XML message.

35. (new) The system of claim 31, wherein said retrieving semantic information from the SOAP header further comprises implementing a server side SOAP handler to create one or more meta-data processors.

36. (new) The system of claim 31, wherein said retrieving semantic information from the SOAP header further comprises implementing a SOAP engine to create one or more meta-data processors, based upon the meta-data contained within the SOAP header.

37. (new) The system of claim 31, wherein said receive side framework further comprises an associating XML processor.

38. (new) The system of claim 35, wherein said one or more meta-data processors created by said server side SOAP handler is configured to load an associated XML schema from a uniform resource identifier (URI) location specified in the SOAP header.

39. (original) The system of claim 37, wherein said associating XML processor generates warning messages upon encountering at least one of XML elements and XML attributes that are unspecified by the XML schema.

40. (new) The system of claim 31, wherein the dynamic exchange of semantic type information and meta-data information for open content message exchange between the sender and the receiver is implemented without changing message format of the message body.